

Jewell (W.)  
YELLOW OR MALIGNANT BILIOUS FEVER

IN THE VICINITY OF

SOUTH STREET WHARF,

PHILADELPHIA, 1853.

[READ BEFORE THE COLLEGE OF PHYSICIANS AUG. 3 AND SEPT. 7, 1853.]

WITH AN APPENDIX.

BY

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# THEORY OF ALGEBRA

BY

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# YELLOW OR MALIGNANT BILIOUS FEVER

IN THE VICINITY OF

## SOUTH STREET WHARF.

[Read before the College of Physicians Aug. 5, 1853.]

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DURING the past month (July) our usually healthy city was thrown into a state of great excitement, from a suspicion that yellow fever, with its fearful concomitants, threatened once more, after an absence of the third of a century, to find a "local habitation and a name" in our midst.

A careful investigation into the circumstances giving rise to this alarm, has resulted in the development of the following facts, having a direct bearing upon the origin and history of this much dreaded visitation:—

On the 25th of June last, the barque Mandarin, Capt. R. N. Campbell, sailed from Cienfuegos, Cuba, for this port, all in good health, with a cargo of sugar, molasses, and cigars. Her crew consisted of twelve men. On arriving at the Lazaretto, July 12, after a passage of seventeen days, she was visited by the officers at the station, and, on oath, the captain reported "cases of smallpox and fever" at Cienfuegos when he left. That he had lost two of his crew on the passage with fever. The statement of the Lazaretto physician is, that "the crew, numbering ten souls, were examined and proved to be in good health; notwithstanding this, it was considered prudent that the barque should be detained until thoroughly ventilated, cleansed, and fumigated; the bedding and clothing of the deceased sailors were destroyed, the vessel whitewashed and fumigated in every part with chloride of lime,



the bedding of the crew aired, and their clothing washed; she was detained an entire day; and, before being allowed to proceed to the city, all on board were separately and minutely examined; all hands were on duty, and apparently free from disease. The captain spent a portion of the day on shore, and before being permitted up, declared on oath that 'all on board were in good health,' and that no sickness, except that resulting in the death of the two seamen, had occurred during the voyage."

On the evening of the 13th, the Mandarin reached the city, and came to at South Street Wharf. On the 16th she was hauled up to the lower side of the first pier below Lombard Street, where she discharged her cargo. The crew having been previously discharged, the captain and mate remained by her, sleeping on board. On Wednesday morning, July 20, seven days after her arrival, she dropped down to the lower side of the first pier above Almond Street (her several positions being designated in the accompanying diagram), where she remained until the 26th, when she was removed by order of the Board of Health to the cove below the Navy Yard, from whence, on the 28th, she was remanded to the Lazaretto, in order to undergo a more rigid and thorough purification.

There was no development of disease of a malignant type in the vicinity of where this vessel lay, as far as has been ascertained (and the strictest inquiry has been instituted by Dr. Gilbert, the Port Physician, to whose politeness we are indebted for many of the facts here recorded), either before or during the time of discharging her cargo, and it is still to be made known that any of her sailors, or any of the laborers employed in removing her cargo, have since been sick.

There appears to have been no cause for alarm until the cargo was out of the vessel, when it was noticed that a very offensive smell proceeded from her hold. After she dropped down to the pier at Almond Street Wharf, on Wednesday morning, the 20th, the stench became intolerable, especially whenever the pumps agitated the bilge-water, contained under the limber planks or flooring of the hold.

The first case of suspicious fever which occurred in the neighborhood was on Tuesday, the 19th of July, the day before the Mandarin left her position at Lombard Street for Almond Street

wharf—Joseph Sharp, a young man, eighteen years of age, who drove a furniture car, and whose stand was on the upper side of South Street wharf. This case proved fatal on the 26th, seven days after the inception of the disease. He died at the corner of Almond and Swanson Streets.

The next case was that of Capt. George Robinson, of the British brig *Effort*, which vessel lay in the Lombard Street dock, next above the pier where the Mandarin discharged. Capt. R. slept on board his brig, but took his meals at the Champion House, kept by Mr. Charles Koehler, near the N. W. corner of South Street and Delaware Avenue. He sickened on Wednesday, the 20th, and died at the Champion House, on Saturday, the 23d, at 3 P. M.

On the evening of the same day, the 20th, Mr. Koehler's son, aged nineteen, a ship-carpenter, who passed daily along the wharf in going to and from his business, took sick, and died on the 27th, at his father's, the Champion House, where he boarded.

G. W. Kerkeslager, who kept the Red Bank Ferry House, on the S. W. corner of South Street and the Delaware or Wharf Street, was the next victim. He was taken on the afternoon of Wednesday, the 20th, and died on the 25th. His wife, Mrs. Kerkeslager, was taken on the same evening, the 20th, and died on the 26th.

Charles Burrows, the second mate of the barque *Mazeppa*, lying on the north side of the pier first below Lombard Street, where the Mandarin discharged her cargo, sickened on Wednesday evening, the 20th,\* was removed to the Pennsylvania Hospital on the 22d, and died the same night.

Frederick H. Kellog, mate of the Mandarin, was taken sick on Thursday, the 21st. On the 23d, was removed to the Pennsylvania Hospital, and died the following day.

The next one attacked was Fanny Martin, a maid-servant at Mr. Koehler's, Champion House. She sickened on Thursday, the 21st, and died on the evening of Tuesday, the 26th. On the same day, another son of Mr. Koehler, aged seventeen, and a daughter, aged nine, both took sick of the fever, but recovered in a few days.

\* The account given by Burrows, at the hospital, was that he sickened on the 17th, but the above date was procured by Dr. Gilbert at his boarding-house, and is no doubt correct.



Honora Stanton, residing at No. 16 Little Water Street, above South, was taken sick on Friday, the 22d, and died on the 27th.

Silas Green, a laboring man, at No. 21 Little Water Street, took sick on Saturday, the 23d. This man came from the country on Wednesday, where he had been for several weeks. On Thursday and Friday evenings he had visited the avenue, and sat for an hour or more on the wharf at Almond Street, where the Mandarin lay. He was not sensible of any bad smell. Recovered.

Capt. R. N. Campbell, of the Mandarin, took sick on Friday, the 23d, and was removed to Mr. Clement's Hotel, Delaware Avenue, between South and Lombard Streets. Recovered.

On the 25th, John Shellcott, steward, and John White, mate of the brig Effort, already alluded to, were taken sick on board that vessel, lying at Lombard Street dock. On the 27th, they were removed to the Pennsylvania Hospital, where John Shellcott died on the 30th; but John White recovered.

Capt. David Murray, of the brig Reform, lying on the north side of the pier above Almond Street wharf, where the Mandarin lay last (see diagram), was taken sick on the 26th, and on the 29th entered the Pennsylvania Hospital. On the 1st inst. he was doing well. Recovered.

James Markley, another of the crew of the Effort, was taken sick on the 27th, removed to the hospital on the 29th, and August 1 was reported doing well. Recovered.

A man about fifty years of age died on the night of the 27th of July, at No. 8 Little Water Street, said to have been with yellow fever; but, upon strict inquiry, there is not a doubt but that his death was from *typhoid* fever, caused by intemperance and exposure.

Between the 19th and the 27th of the month (July), there were other cases of sickness in the neighborhood of South Street and the avenue, but those above enumerated are all the deaths that are known to have taken place, and all the cases of disease, as far as could be ascertained, that bore any resemblance to fever of a malignant grade.

The following are the pathognomonic symptoms exhibited in several of the cases of yellow fever and furnished to Dr. Gilbert and the writer by the physicians in attendance.

Jos. Sharp, æt. 18, sickened 19th, died 26th July. Fever

without remission until end of third day; then prostration, without reaction; sallow skin and eye.

Capt. Geo. Robinson, of brig Effort, taken with fever 20th; died 23d. Fever without remission for thirty-six hours, then prostration without reaction; black vomit, hemorrhage from mucous surfaces, and bronzed color of skin.

G. W. Kerkeslager, sickened 20th, died 25th. Excruciating pain in loins; fever without remission for three days, when pulse became natural and sank; black vomit, and sallowness of conjunctiva.

Wife of last case, sickened two hours after, and died twenty hours after her husband. Symptoms the same, except no black vomit.

I. D. Koehler, aged 19, sickened 20th, died 27th. Pain in loins; no remission of fever until end of third day; yellow skin, black vomit, hemorrhage from mucous membranes.

Fanny Martin at Koehler's, sickened 22d, died 26th. Symptoms same as last case, except the yellow skin.

J. M. G. Koehler, aged 17, taken 21st; and Pauline, daughter, aged 9, taken same evening. Febrile excitement of the same character as the others; abatement on third day, followed by reaction and recovery.

Case of Honora Stanton. Could not discover any symptoms of yellow fever in the account of this case as given by the husband, family, and neighbors, nor did her body after death present any symptoms favorable to such a view. The certificate of her physician, Dr. Gegan, said *bilious fever*, although the doctor insisted upon it that she had black vomit.

Silas Green, taken on the 23d. Fever without intermission for several days, with vomiting of bilious matter, and considerable gastric distress; intense pain in the head, back, and limbs; fever abated on the 26th, and recovery was rapid.

Capt. R. N. Campbell was attacked on the 23d. Symptoms were accompanied by headache; fever without remission for several days; nausea, without vomiting; was convalescent on the 27th.

We are not advised that the treatment in the above cases differed particularly from the usual method pursued in our ordinary bilious fevers, unless by the early introduction of decided doses of quinia in several of them.



Of the cases treated in the hospital, Dr. Gerhard has furnished the following very brief but emphatic report:—

“DEAR DOCTOR: I inclose you a list of cases of *yellow fever* admitted into the hospital; two of them were from vessels from Cuba, the others were from the English brig *Effort*, lying near the Mandarin, and one from the Reform, lying in the same neighborhood.

“Two of the fatal cases came into the hospital dying; one had black vomit, the other had the same black secretion contained in his stomach. The steward of the *Effort* had abundant black vomit in the last twelve hours of his life. These cases have all been genuine *yellow fever*, bearing no resemblance to any other variety of febrile diseases.

“The examination after death, in the three cases, gave us nothing but the usual lesions; that is, the peculiar yellowish hue of the liver, coupled, generally, with a little gastritis and a slight enlargement of the spleen.

“All of them had a yellowish hue, and one was exceedingly jaundiced. The treatment we adopted was quinia in large doses, together with cupping in some cases.

“Striking out the two cases that came in dying, we have lost one out of four.”

Before the arrival of the Mandarin, and up to the 19th of July, the day on which the first case of fever occurred, the vicinity of South Street and the wharf, as well as the entire city, enjoyed its usual degree of health. Certain it is, that no epidemic was prevalent. For the week ending July 9, the deaths in the city and liberties were 229, and only one death from fever of a bilious type. For the week ending July 16, there were 206 deaths, including one from intermittent fever. For the week ending July 23, there were 218 deaths, of which four were from fever. Three of these were in children; one was recorded fever, one bilious, one congestive, and one remittent.

As yet, no one with whom we have conversed has ventured to intimate a doubt as to the agency of some uncommon and virulent poison, diffused through the atmosphere, as the pestilential cause of the malignant or yellow fever, a few cases of which have made their appearance recently in the vicinity of South Street wharf.



The essential character and origin of this poison may afford an opportunity for the speculative inquirer to indulge anew, either in an effort to demolish some favorite, though long established, yet not the less false theory of the origin of malaria; or to build upon the ruins of theories, once accredited as ingenious and popular, some more modern system of causation, which, as we advance in medical science, may be destined to meet the fate of those which have preceded it, however elaborately and industriously they may have been exemplified and sustained.

But, while we leave the discussion of this subject to others, it will not, we conceive, be questioned, when all the facts are clearly and minutely examined into, that this poison, whatever may be the nature of its character, must in part be ascribed to a morbid effluvia generated under the limber planks in the hold of the barque Mandarin, from the putrescent state of her bilge-water.

Upon the first glance at the Mandarin, and the history of her voyage previous to her arrival at Philadelphia, the advocates for a contagious germ for yellow fever, or, in other words, a principle emanating from the sick, and capable of being conveyed from one person to another, as the focus for the fever which has threatened our city, may imagine they have discovered another instance in support of their favorite theory. This, however, we are persuaded, can hardly be the case, although we are desirous that a careful review of the facts connected with this ill-fated vessel should speak for itself.

The Mandarin left Cienfuegos on the 25th of June, with a healthy crew. No *epidemic* was prevailing there when she sailed, although the captain, on oath, admits that a "few cases of small-pox and fever" did exist. He states that his crew lived on board the barque while in port, anchored off the town, were seldom on shore, and, as far as his knowledge extended, none of them had visited among the sick.

The captain admits that the hold of his vessel had often been in a foul condition, as all vessels were that carried cargoes of sugar and molasses. Eight days out from Cienfuegos, July 3, one of the seamen sickened with fever, and died on the 7th. On the ninth day at sea, July 4, another took sick with fever, and died on the 9th, being the fifth day of his illness. This last man was thrown overboard after the vessel was within the capes of the Delaware.

On the 12th of July, seventeen days from the time of leaving Cienfuegos, she hoisted a whiff on approaching the Lazaretto, for a visit from the doctor. She remained at the station one day, to undergo a certain amount of cleansing, as a precautionary measure only, there being at the time no sickness on board.

On the 13th, she was permitted up, and at Lombard Street wharf proceeded to unload. The seamen were discharged, and, up to this date, we are yet to learn of any one of the eight having had any sickness; nor can we ascertain that any of those who worked on board, during the time of her discharging cargo, have either died or sickened.

Not a case of fever, supposed to have had its origin from the malaria arising out of the foul condition of the bilge-water of the Mandarin, occurred until the 19th of July, six days after her arrival, and not until subsequently to the cargo being discharged.

All the cases of fever known to have taken place up to this date, August 3, seventeen in number, and in the vicinity of the Mandarin, occurred between the 19th and 27th of July. Of these eleven, nearly two-thirds, died.

The poison appeared to be most active between the 19th and 22d. During this interval, twelve cases were reported, and of these ten died.

Of the seventeen cases recorded, we have no direct evidence of the existence of black vomit but in eight, and all of these perished.

On the 20th of July, the Mandarin was warped down to Almond Street wharf, below South Street, about three hundred yards from her berth at Lombard Street.

All the cases that have occurred up to this date, either resided in, or did business in the vicinity of South Street wharf, nor is it known that any case originated below, or south of where the vessel had been last moored, nor has any case come within our knowledge north of Lombard Street.

The prevailing winds during the week ending the 27th, varied from north-north-east to south-east and south, while the average gauge of the thermometer was  $79\frac{1}{2}^{\circ}$ .

From all the facts above recited, we may be warranted in drawing the following conclusions:—

1. That no disease of a malignant type was prevailing in our city previous to the arrival of the Mandarin.

2. That none of the seamen discharged from the Mandarin have sickened.

3. That none of the laborers employed in unloading the Mandarin have taken the disease.

4. That the fever did not develop itself until after the cargo was discharged; when, it is believed, the noxious emanations which had been latent in the hold, under the limbers of the vessel, had an opportunity (acted upon by certain exciting causes, as heat and moisture) to disseminate itself, and, coming into contact with other elements of decomposition existing on shore and in the docks, soon poisoned the atmosphere of the immediate neighborhood where the barque lay moored.

5. That in no instance can the disease be traced to any individual, except among those who either visited or resided in the immediate vicinity of South and Lombard Street Wharves.

6. In no case has the disease been communicated to any person visiting, or engaged in attendance upon the sick.

7. Up to this period, not a single instance can be met with, having its origin to the south of where the Mandarin lay last.

[Read September 7, 1853.]

Since our communication of August 3, read before the College, on the subject of yellow fever in this city, we have come into possession of some additional particulars, and a number of new cases that are well authenticated, and beg leave to submit them for your consideration.

On the 26th of July, as already stated in our first communication, the barque Mandarin, by order of the Board of Health, was taken in charge by the health officer, Wm. McGlensey, Esq., who put on board of her a crew of five men, including the watchman. These men remained on board from the 26th up to the 29th of July, when she was safely anchored inside the island of Little Tinicum, opposite the Lazaretto, and placed in charge of the quarantine master. Neither the health officer nor any of his men, nor did the watchman who remained on board until after her purification and return to the city, experience an hour's sickness.



While at the Lazaretto, where she remained from the 29th of July to the 2d of August, several of her limber planks were removed, but no mud or other collection of filth was found concealed there. She was then scuttled and filled with water, which remained in her twenty-four hours. The holes were then plugged up, and the water pumped out. After this operation, she was thoroughly whitewashed, and in every part of her chloride of lime was freely distributed. During this process, the quarantine master, with several of the barge-men at the station, were on board and at work in the hold, cabin, and other parts of the vessel for several hours during each day—the weather excessively hot, without any inconvenience to their health.

On her return to the city, the 3d of August, she was moored at Noble Street wharf, Northern Liberties, where she remained until near the close of the month; then was removed to the screw dock, Kensington, for repairs; and, on the 6th of the present month, was taking in cargo between Arch and Race Streets, preparatory to a voyage for New Orleans.

No sickness whatever has followed in her track, since she left Almond Street wharf on the 26th of last July.

The population within the district where the disease first appeared, and where it seems to have been almost altogether confined, is by no means crowded. Many of the houses, however, were filthy in the extreme, with dirty yards, and full and foul privies.

The docks along the Delaware line, between Lombard and Almond Streets, as usual, contain large accumulations of offensive mud and other filth.

Upon the authority of a highly respectable shipwright, who, in his official capacity, very carefully examined the Mandarin, we learn that her pumps are so constructed as to render it impossible to remove all the water in her hold. Being a tight vessel, the bilge-water remaining in her will smell in a very few days after pumping her clean. His language is: "If you draw those pumps every five minutes in the day, there must remain in her twelve inches of water. My opinion is, that the pumps do not go down low enough; they do not go down within twelve inches of the keel, whereas they ought to be at least eight inches lower."

We present this fact in evidence of the impure state of the hold

of the Mandarin, six days after she was pumped clean at the Lazaretto.

In addition, however, to the prevalence of the morbid atmosphere which we have clearly shown developed itself on board the Mandarin—but not until her cargo was discharged—and which so sensibly affected individuals on approaching her when she lay at Almond Street wharf, we must not for a moment conceal the existing causes in the immediate vicinity of South Street wharf, sufficient to justify the supposition of their agency, in the development of disease of a malignant type, when subjected to the high thermometrical influence which prevailed throughout the months of June and July. Not the least mischievous of these causes in the production of an unhealthy atmosphere, was the outlet of the sewer into the dock at South Street ferry, belching forth continually putrid masses of animal and vegetable filth, accumulating around its mouth, and exposed at low water to the rays of the sun, exhaling streams of unwholesome and poisonous gases into the surrounding air. Besides this agent, there was a most foul wharf at the upper side of South Street; a filthy avenue, between Lombard and South Streets, without any properly-constructed surface drainage; numerous damp and confined cellars subject to an occasional overflow by the ebbing and flowing of the tide-water of the Delaware; and various minor causes that might properly be added to the above category, fruitful in the production of atmospherical changes injurious to health.

In summing up, however, there is one prominent feature in the chain of our narrative that must not be passed by without notice, viz.:—

No yellow fever existed in our city until six days after the arrival of the Mandarin; that it broke out immediately abreast of the wharf where she first hauled to, and, although there were existing causes in the vicinity—on shore—for the production of disease, there were “plague spots” in other parts of our city, remote from South Street wharf, where, had the question been asked, we should have unhesitatingly located the first appearance of fever of a malignant type, independent of the suspected existence of a foreign focus of infection, competent to exercise its morbid influence on an atmosphere already tainted.

In presenting the above, it is proper to say that we are influ-

enced solely by a desire to arrive at the true cause for the origin of the yellow fever in our city. That we are no blind adherent to any favorite theory for the spontaneous or domestic origin of yellow fever, nor yet an uncompromising opponent of those who advocate the doctrine of a contagious principle, capable of being carried about from place to place, and, under a train of favorable circumstances, productive of disease. An honest inquirer after truth, we would disguise no fact, that might tend in any way to elucidate a question so intricate, that for years it has been controverted by the ablest pens in our profession, and yet remains a mystery.

In our first account of this disease, we narrated briefly the history of seventeen cases, bringing them down to July 27, and gave the pathognomonic symptoms of several of them as far as they could be obtained. Since then, we have collected twenty-seven additional cases, that may be relied upon, and presenting, in all respects, the evidences of genuine yellow fever.

The accompanying table embraces the entire list, in their numerical order, since July 19, including the name, age, sex, place of birth, where the disease was contracted, the date of attack, where attended, by whom, the duration of the disease, those that were accompanied with black vomit, those that died, and those that recovered.

From this table we learn that 9 of the cases were under 20 years of age; 18 between 20 and 30; 10 between 30 and 40; and 7 over 40.

Twenty-five were males and nineteen females. Of the whole number, twenty were born in Ireland, four in Germany, five in England, and fifteen in the United States.

Thirty-seven of these cases may be traced directly to the infected district. In four, the origin is doubtful, and in three, no clew could be had as to where the disease was contracted.

Of the forty-four cases, thirty-four died. The mean duration of the disease in those who died was four days; not including, however, Dr. Jackson's case, No. 23, and that of James Genton, No. 30. The former was protracted until the fourteenth, and the latter to the twelfth day.

In twenty-six of the forty-four cases recorded, there occurred the peculiar dark-colored "coffee-grounds" ejection from the sto-



mach, known as black vomit.\* This substance, when placed within the field of the microscope, exhibited the true blood-corpuscles, denoting its sanguineous character, with the exception of that in Ellen Parr's case, No. 35, examined by Prof. Gilbert, whose testimony disproves its identity with blood, and consequently throws a doubt on the genuineness of the case. This patient recovered, and was one of the two instances of recovery where the black vomit was said to have occurred.

In eleven of the thirty-four deaths a *post-mortem* was made; in all of which the yellow or ochre-colored liver was detected in whole or in part. In all of them the "coffee-grounds" fluid, or melænic blood, was found, either in the stomach or intestines, with other evidences of a pernicious form of fever.

The mortality, according to the table, has been fearful; equal to 80 per cent., or 5 to 1 of recoveries.†

The sixteenth case in the table‡ was Rosanna McKean, a native of Ireland, a patient of Dr. William H. Hooper, and residing at No. 172½ South Second Street. From her own account, she had made a visit on Monday, three days previous to Dr. Hooper's seeing her, to the corner of South and Water Streets, next door to where two persons had died with yellow fever. We are indebted to Dr. H. for the following symptoms of this as well as those in several other cases, which he kindly furnished for our use:—

"Called to see her at 4 P. M., July 24, 1853; had been ill three days with fever and severe pain in the head and back; found the eyes injected, intense epigastric uneasiness, with great tenderness on pressure; pulse feeble; face dark and suffused; intense pain in the back of neck; tongue perfectly natural in color and to the touch.

"29th. Great prostration; vomited during the night a large quantity of a brownish fluid, containing a sediment resembling coffee-grounds. 12 M. Rejected everything taken into the stomach. Resisted all stimulants, gulping up everything by mouthfuls.

\* In the seventh case, there was no black vomit before death, but it was found in the stomach at the *post-mortem*.

† By a reference to the accompanying diagram of the infected locality, the precise situation of each case recorded is indicated, corresponding to the number in the table.

‡ The previous cases having been already described.

Intense thirst; the eye at this stage assuming a peculiar pinkish hue; tongue remaining clean.

"30th. Sinking. Skin cold and system collapsed. Died at 3 P. M. Before death the eye became jaundiced and the skin bronzed in appearance."

The nineteenth case was James Clements, who attended bar for his father, at Clements's Hotel, on Delaware Avenue between Lombard and South Streets, immediately in front of the wharf where the Mandarin discharged her cargo. He was taken ill on Friday, July 29, and went to his residence, No. 93 Prime Street. Dr. Wm. Klapp, his physician, saw him for the first time on Sunday, 31st, when he was rapidly sinking, and died on Monday, August 1, at 2 A. M. Dr. K. could not obtain any connected account of his symptoms previous to his visit on Sunday, but from the injected eye, deep yellow tinge of the skin universally, and the fatally rapid progress of the case, identified it as one similar to those of yellow fever he had witnessed in the vicinity of South Street Wharf.\*

Mrs. Mullen, residing at No. 4 Swanson Street, a patient of Dr. John Gegan, was attacked with malignant symptoms on the 29th of July; the next day had black vomit. Prof. S. Jackson saw this case. On the 3d of August, the vomiting had ceased under the use of a powerfully stimulating acid mixture, and hopes were entertained that she might recover; but during the following day she began to sink, and died on the 5th, at 4 P. M. Skin became very yellow after death.

Mary Bulger, residing at No. 12 Swanson Street (a continuation of Little Water Street) below South, west side, attended by Dr. Gegan, was taken ill on the 30th of July, and died on the 3d of August, with black vomit. This, according to the doctor's account, was a highly malignant case. The premises where she died were in a very filthy condition.

About this time John Haslett, a drayman, whose stand was at

\* Dr. Gilbert, the Port Physician, says of this case: "His father informed me that his son had been in delicate health for years. On the 19th of July he had a slight diarrhœa, which continued until the 29th, when he was attacked with pain in the head, back, and limbs; had very little fever; was sensible throughout; expectorated a little blood before his death, which took place on the 1st of August."

This account would seem to strengthen the impressions of Dr. W. Klapp.

Chestnut Street wharf, was taken ill at his residence Christian Street above Eleventh. He was attended by Dr. W. Keating. We are not in possession of particular symptoms, farther than that he had black vomit, and died at St. Joseph's Hospital in three hours after his admission on the 2d of August.

There has been some doubt as to the origin of this case of yellow fever, unless we consent to the proposition, that the influence of the poison had extended its march along the river front to Chestnut Street, and there communicated the disease to Haslett. But as no other case has manifested itself in that vicinity, up to this date, we must either consider it isolated, or endeavor to trace the infection to a location nearer the contaminated district. We have taken some pains to trace out the history of Haslett's sickness, and within a few days learned from his employer, Mr. Christian Ferry, that for several weeks preceding his last illness he had not been well, complaining of his head, and was very drowsy, but did not lay by. Mr. Ferry's drays had not hauled any loads into or from the neighborhood of Lombard or South Street wharf since the 13th of July. But, on reflection, and on reference to his book account, recollected having sent repeatedly one or the other of his men to South Street ferry, on business, during the week previous to Haslett's sickness, and believes that John had been there more than once. He stated farther, that his men were every day hauling loads into Southwark, and that vicinity, from Chestnut Street wharf, and thinks it not unlikely Haslett may have entered the infected district in that way.

Another interesting case, occurring beyond the borders of the infected locality, but which may be clearly traced to an immediate exposure to atmospheric infection, was that of Ann Jane Stewart, residence Tenth Street near Shippen, under the care of Prof. S. Jackson, to whom we are indebted for the following particulars:—

"Miss S. was in good health previous to Sunday, the 30th of July. On the afternoon of the preceding Wednesday, the 26th, she made a visit to Swanson Street near South on business, and remained there for some time. Returning home, she continued well until the 30th, when she complained of intense pain in the head and limbs, great distress over the epigastrium, oppression and nausea, with fever, continuing without intermission until



Wednesday evening, the 3d of August, when the fever abated. From that time up to the period of her death, on the 13th of August, fourteen days, there was no sensible reaction. The nausea, sense of oppression about the heart, and extreme tenderness over the epigastrium continued unabated until she died, accompanied with a purging of yellow and bloody fluid. Her pulse remained about 130 throughout, while her skin, from the commencement of the attack, was of a dark yellowish hue. The extreme heat of the weather, during the three last days of her life, tended greatly to prostrate her already enfeebled system, and, in my estimation, hastened her death."

It deserves a passing notice, that from the date of the last case, July 30th, there was a temporary cessation of the disease for the space of seven days. No new case occurred again until the 6th of August, when the evidence was clear, that the epidemic influence not only lingered among us, but that it was occupying more territory, and taking a wider range than was at first supposed to exist. From this date, August 6th, it will be perceived as we proceed, that a number of genuine cases of yellow fever happened a short distance beyond the limits of the first twenty-two cases, as embracing the infected district.

Mary Williams, the next case, an Irish woman, aged twenty-two years, was also taken ill away from the locality of the infection, and doubts arose as to the source of her sickness. An accidental occurrence, however, shed the clearest light upon its origin, and satisfied us that she had fairly contracted her disease in Swanson Street below South.

Mary boarded for a number of weeks with Mrs. Mary Bulger, at No. 12 Swanson Street, who died of yellow fever on the 4th of August. On the 3d, the day before Mrs. B. died, Mary Williams left the house, returning the next day, the 4th, for her clothes, but refused to see the body of Mary Bulger. From hence she went to No. 338 North Front Street above Noble. Dr. A. C. Bournonville, who was called in, has politely furnished us with the following statement: "She came to this place on Thursday evening, 'as well,' according to the language of her room-mate, 'as she ever knew her to be.' She first complained on Saturday, after dinner; I did not see her until Monday. Found her laboring under fever, with great suffering from distress over the epigas-

trium, cramps in legs, pain in head and back, eyes injected, red, face flushed, tongue coated white, and her body covered with a petechial eruption. Her symptoms not improving, on Tuesday she was admitted into St. Joseph's Hospital."

On Wednesday, as we learned at the hospital, her fever gave way to prostration. On Thursday, her skin became very yellow, accompanied with extreme sensibility on the slightest touch, the petechia increasing. On Friday, the 12th, she began to throw up a peculiar dark-colored fluid, in large quantities, which left the "coffee-grounds" sediment on the clothes; and at 10½ P. M. she died, six days from the date of her attack.

The *post-mortem*, made twelve hours after death, revealed the peculiar "box-wood" colored liver, congested appearance of other viscera of the abdomen; extreme yellowness of the adipose matter; softening of the mucous membrane of the stomach, and a deposition thereon of a dark, muddy-looking substance. A slight puncture of the stomach, made accidentally during the dissection, deprived us of the opportunity of examining its fluid contents. Neither the brain nor lungs were examined.

The next case occurred at No. 37 Almond Street, between Front and Second, on the 9th of August, in the person of John S. Williams. A brief statement has been kindly furnished by our friend Prof. Mitchell, and is, in substance, as follows:—

John S. Williams, aged twenty and a half years, native of Chester, Pa., trade, carpenter. Returned from a short visit to Port Deposit, Md. (which place he represented as unusually healthy), on the 18th of July, in good health; continued well until the night between the 8th and 9th of August. About 4 A. M. on the 9th, felt a severe headache, pain in the lumbar region, legs, and in the finger and toe-joints. At 8 A. M. had a chill, followed by fever. About 6½ P. M. vomited, at first what he had recently swallowed, then frothy matter, but no bile; vomited again about 7 P. M. Took Epsom salts at noon on the 9th, which purged him twice during the afternoon and twice at night.

Dr. J. V. Herriott saw him for the first time on the 9th, about 8 P. M.; describes his pulse one hundred and twenty-nine, and regular; headache, backache, and general soreness; eyes injected, and patient very restless; began to be yellow on Wednesday, the 10th; considerable prostration; pulse one hundred and six;

showed delirium at 9 P. M. Thursday, the 11th, pulse ninety-two; sallowness increased, and extended to the abdomen; vomited coffee-grounds in appearance at 2½ P. M., and in half an hour again. Died at twenty minutes after 4 P. M., on Friday, 12th of August, having been sick exactly three and a half days, or eighty-four hours.

Dr. Mitchell says: "I saw him on Friday the 12th, at 11 A. M. Yellow skin, most conspicuous on breast and neck; eyes of delicate pink color, slightly streaked with yellow; tongue large, soft, white in middle, with red edges and tips; pulse one hundred and eight, soft and regular; mind muddy; answered correctly when questioned; very tender over the epigastrium and the right iliac fossa. When in *articulo mortis*, the evacuations from his bowels were liquid, and of a darker color than the matter vomited."

Young Williams stated to Dr. Mitchell, that on Monday, the 8th, the day preceding his attack, he had walked from No. 37 Almond Street to Schuylkill Eighth and Market Streets, and returned. On the same day, to and from Apple Street, running north from Brown Street, between Fourth and Fifth Streets, Northern Liberties. In the evening, as was his custom, he resorted to Almond Street wharf, for cool river air. From thence walked with a friend to the Commissioners' Hall, Southwark; made no complaint, had an excellent appetite, and retired to bed apparently well.

He had, on several occasions during the two weeks preceding his sickness, been along the wharves from Almond to Walnut Street, but had not been on board any vessel, nor had he seen or been in the house with any person sick in any form. No *post-mortem* could be obtained.

The two following cases were in Krider's Court, Southwark, a small place running east from Front Street, south of Almond Street, as delineated on the diagram. An exceedingly filthy and ill-ventilated court; the houses are old, confined, and the passage-way is deficient in drainage. On the 13th of August, a woman died in this court from dysentery, after five days' illness. Within a few days, also, a child, from cholera infantum.

Betsey Stephens, aged eighteen, unmarried, was unwell a few days from suppressed menstruation, about the 29th of last month (July). On the 8th of August, was well enough to walk a long



distance into "the Neck." On the 9th, her father had an attack of cramp, and Betsey went in great haste for a physician a distance of five or six squares. This over-exertion and excitement brought on violent fever the same evening. Her physician, Dr. J. Heritage, has furnished us with the following synopsis of her case:—

"My first visit to Miss Stephens was on the 9th of August. She complained of severe pain in the head, back, and inferior extremities; tongue coated and dry, presenting a brownish appearance; skin hot and dry; pulse about one hundred, full and tense; bowels costive.

"I saw her again on the 10th, at 9 A. M. All the preceding symptoms were much aggravated, with the addition of pain in the epigastrium, which was increased by pressure; pulse one hundred and twenty, full and tense; face flushed; conjunctivæ red, and slightly tinged with brown; respiration hurried. At 4 P. M., much worse, tongue darkish-brown, and much dryer; pulse more frequent, but not so full; face flushed, and expressive of the greatest anxiety; stomach exceedingly irritable, ejecting everything, even ice-water; thirst intense.

"At 9 P. M., the only noticeable change was in the matter ejected from the stomach, which now resembled in appearance coffee-grounds.

"At 9 A. M., on the 11th, learned that she had passed a very restless night, vomiting continually. Pulse more feeble; dark fluid discharges, tinged with blood, from the bowels; great prostration. From this time she continued to sink, despite the sulphate of quinia and milk punch, until the 13th, when she died."

Ellen Boland was the companion of Betsey Stephens. She formerly resided at No. 405 South Front Street, near Catharine. About two weeks previous to her last illness, had an attack of erysipelas, from which she recovered. On or about the 4th of August, went to board in Krider's Court, in the house with Betsey Stephens. Here she was taken ill with fever on the 10th, from whence she was removed to St. Joseph's Hospital on the 13th, and died on the 15th, with the symptoms of yellow fever, accompanied by black vomit.

The above cases occurred in the immediate vicinity of the infected district, as originally presented, nor could it be ascer-

tained positively, that either of them had been east of Front Street between Almond and Pine Streets; an evidence that the influence of the poison had extended south of Almond Street.

We are indebted to the notes of Dr. John Gegan for the subjoined account of a case occurring beyond the infected neighborhood:—

“James Riley, aged twenty-four years, by trade a chairmaker, residing back of No. 25 Union Street, near Second, of temperate habits, worked in Race Street; had no communication with the infected district. Was taken sick on Saturday, August 13th, with chill, followed by fever; pulse one hundred and twenty, strong and active; considerable tenderness over the epigastrium; severe pain in the head; cramps in the legs; eyes injected; tongue furred and soft; stomach irritable; bowels constipated. All the symptoms were relieved within twenty-four hours, by venesection, calomel, and neutral mixture.

“On the 14th, the pulse was one hundred; head relieved of pain; skin yellow universally; tongue thickly coated, white; commenced ejecting black vomit from stomach without effort; the evacuations from the bowels were of a dark-colored matter; epistaxis of dark blood; urine very dark in color; constant thirst.

“Eight P. M., increased yellowness of skin; tongue continued furred; conjunctivæ injected red; vomiting ceased, followed by an abatement of all the symptoms. At midnight the epistaxis returned, with rapid prostration, and he died at 4½ A. M. on the 15th, in forty-eight hours.

“Thirty hours after death the body became quite black in color.”

The three subjoined cases possess more than ordinary interest, because of the difficulty in establishing a direct intercourse between them and the infected location, and from the circumstance of their having been sailors belonging to the same vessel, lying at a remote point from the district where the fever first made its appearance.

Oliver Pitcher, seaman, aged twenty-three, from Waldoborough, Maine, and James Genton, seaman, aged nineteen, from Waldoborough, Maine, entered the Pennsylvania Hospital August 15, laboring under yellow fever. The former died on the 18th, while the latter lingered until the 27th.

John Brennock, seaman, aged twenty-eight, from Portland, Maine, entered the hospital on the 18th, and died on the 19th with yellow fever. In two of these cases there was black vomit.

The history of the above cases, as far as we have been able to obtain it, is as follows:—

They were seamen belonging to the schooner *Canary*, Captain Winchenpaugh, which arrived here on the 9th of August, freighted with lumber from Calais, Maine. She discharged her cargo at the fourth wharf above the Navy Yard, full a quarter of a mile below South Street. About the 12th or 13th, she was taken up to the coal wharves at Richmond, and on the 15th, two of the sailors referred to above sickened, and were taken to the hospital. The third man, John Brennock, who was received on the 18th, did not come directly from the *Canary*, but from Moyamensing Prison, to which place he had been committed four days previously, on account of a drunken spree.

If these men died from yellow fever, where did they contract it? It is evident that there had not been any yellow fever atmosphere either at Richmond or near the Navy Yard. Nor is there any evidence that the disease could have originated on board the schooner *Canary*. She was a new northern vessel, four years old, had never been in a southern port, and had no bilge-water in her hold. This testimony is derived from James Genton, one of the men who was at the hospital. Not willing, however, to suppress a single known fact that can shed a ray of light on its causation, we would state that John Brennock, one of the men, arrived in Philadelphia on the 21st of June last, in the schooner *Splendid*, from Cardenas, Cuba, where yellow fever prevails every year. He returned to his home in Portland, Maine, shipped on board the schooner *Canary*, and arrived in Philadelphia as already stated. Query—Could the opening of his chest of sea-clothes, and turning out in the presence of his shipmates, Genton and Pitcher, some unwashed and confined garment that he had worn last in Cardenas, on the hypothesis that it may be portable in the form of a tropical germ, and which exotic became reproductive in our atmosphere, furnish the foci for the disease in these sailors?

A much more rational theory, however, than its foreign importation, in these cases, is at hand, inasmuch as we must resort to inferential evidence to account for their infection. When the



Canary was discharging cargo, at the fourth wharf above the Navy Yard, the crew, on their way up town, being "long shore men," would naturally keep near the river, and would have to pass through the district of South and Water Street, or may have visited among the sailor boarding-houses or taverns in that vicinity, and there imbibed the disease of which they died. This, however, is all speculation, and must be taken for what it is worth in making out the case.

The next on record is the case of Thomas E. Crowell, Esq., aged thirty-eight, a lawyer by profession, residence No. 266 Front Street, below South. We learn from Dr. John Gegan, his physician, that he was taken ill on Tuesday, August 16, with a severe chill, followed by fever, intense pain in the head, extreme tenderness over the epigastrium, tongue clean. On Wednesday, the 17th, he was ejecting black vomit, and had slight delirium. On Thursday, all his symptoms grew worse, and on Friday, the 19th, he was attacked with convulsions, and died the same day. He had an injected eye and yellowness of skin throughout his sickness.

The three following cases were at No. 76, Penn Street, below South, in the practice of Dr. Jos. Huckel. The house was old, contracted, badly ventilated, and exceedingly filthy, as were all the families, three in number, occupying the premises. Samuel Morrison had died in the same room where these cases lay sick, about two weeks previously, and reported in Dr. Gegan's certificate as bilious fever.

Dr. Huckel informed us that Mary Carrigan, aged seventy, was taken ill on Wednesday, the 17th, with severe pain in the head, violent fever, intense thirst, tenderness all over the abdomen, extreme restlessness and moaning, tongue unusually white, vomited a watery fluid, bowels constipated, red spots over her extremities. This woman died on Friday A. M., the 19th, in forty-eight hours. Appearance six hours after death—skin very yellow, vibices on the extremities, very dark in color.

Her daughter, Mary Carrigan, aged eighteen, sickened same day as the mother, and lay in the same bed. Her symptoms were fever, pain in the head, white tongue, thirst, vomiting of dark-colored watery fluid. On Friday, at 1 P. M., was pulseless, sinking rapidly; mind clear; tongue intensely red, dry, and protruded with difficulty; extreme tenderness over the epigastrium; eyes

injected, and of a pinkish hue; skin over body yellow; had vomited a very dark fluid, but not examined by her physician. She died on the morning of the 20th, 3 A. M.

Edward Carrigan, brother to the above, aged twenty-six, residing in the same room, sickened on the 19th, and died on the 22d. Symptoms similar to those of his mother and sister. Skin yellow, but no black vomit.

No *post-mortem* could be obtained in these cases.

For an account of the next case we are indebted to the politeness of Dr. W. H. Hooper, the physician in attendance. The origin of it, as in that of Riley's, is involved in obscurity, unless the infected atmosphere extended as far west as Third Street.

"8th Month 19, '53. Called to see Mary Turner, *æt.* twenty-five years, at No. 1 Loxley's Court. Found the eye red and injected; great epigastric uneasiness, tenderness on pressure; pulse full and tense, ranging one hundred and ten. Complained of great pain in back of head and neck; continual vomiting of glairy mucus; bowels loose, moved four times during the day. She informed me that she was living with Mr. West, as a servant, at No. 82 Lombard Street, between Third and Fourth, where she sickened; had been sick two days, and had taken a drachm of magnesia.

"20th. Pulse feeble; skin cold and clammy; vomiting had not been arrested during the night; continually sighing and tossing in bed. At 1½ P. M., same condition; pulse more feeble; intellect clear; peculiar pinkish hue of the eye. Numerous small spots, injected of a deep red color, made their appearance upon the neck, breast, and arms, as it were in clusters. At 6 P. M. died. The eye and skin before death were slightly tinged of a yellow hue. The matter vomited on the night of the 20th was of a brownish hue, containing a blackish sediment resembling coffee-grounds."

This woman declared to us, at noon on the day she died, that she had not been at any one time for weeks past in the vicinity of the district of South and Lombard Streets, east of Second Street. Had no acquaintances in that neighborhood.

The case of Ellen Parr is one of doubtful character, and yet possesses interest from several circumstances.

According to the statement of her physician, Dr. Hooper, she had "black vomit," and recovered. She took in three days two

hundred and forty grains sulphate of quinia, eighty grains daily, without unpleasant symptoms. Lastly, she resided in Gray's Alley, running from Front to Second Street, between Walnut and Chestnut Streets, and no evidence could be obtained of her having visited the infected district, or its immediate vicinity.

We furnish the history, with treatment, as presented by Dr. H., together with a short statement from Dr. Gilbert, the Port Physician, who visited her after the symptoms began to yield, and who examined the matter thrown from her stomach.

"*8th Mo.* 19, 1853. Ellen Parr, æt. 20 years, native of Ireland, residence back of No. 13 Gray's Alley.

"Found pulse 115, full and tense; tongue whitish; great epigastric uneasiness; vomiting continually; countenance suffused; eyes red and fiery; complained of great pain in the back of the head and back; had been sick only one day. Ordered five grains of sulphate of quinia in solution every two hours, a blister three by four over the epigastrium.

"*20th*, at 8½ A. M. Found the pulse 80, somewhat feeble; vomited during the night a brownish fluid containing a small quantity of brownish sediment. Continued the quinia, with an ounce of essence of beef every hour, and one ounce of brandy made into punch every other hour. 12 A. M., found the vomiting had continued, but only of a yellowish hue. Treatment same. At 5 P. M., vomiting only at intervals, mucus, with a slight deposition of fine powder resembling soot. Treatment continued, with the addition of one ounce of lemon-juice every hour.

"*21st*, 8½ A. M. No vomiting during the night; she said she derived instant relief from the nausea by the first draught of the lemon-juice; pulse 80, more full; tongue whitish, and red at the edges. Treatment continued; brandy discontinued at 1 P. M. No vomiting; pulse better.

"*Monday.* Same condition; treatment continued.

"At 5 P. M. complained of intense pain and buzzing in the ears. Reduced the quinia to two and a half grains every two hours.

"*Tuesday.* Still improving.

"*Wednesday.* The injected eye entirely gone; tongue clean and moist. Quinia one grain every two hours. Essence of beef and lemonade ordered.

"*Thursday.* Convalescent.



"One fact worthy of note was the immense doses of quinia taken for the first three days, viz., two hundred and forty grains in all, without any ill effect. Another, was the injected eye clearing and furred tongue cleaning, in one night."

Dr. Gilbert, who visited her on the 21st, says: "Her case does not appear to me to have been yellow fever. The only symptom which is at all suspicious is the dark matter vomited. This is of a lead color, not black or reddish-black, as in genuine yellow fever. I examined some of its deposit with the microscope, and the peculiar black pigment, as well as blood-corpuscles, found in black vomit of yellow fever, are wanting. There is no yellowness of skin, no hemorrhage, and her mind has been clear throughout the attack. The eyes are natural."

There have been three cases of yellow fever in the Blockley Hospital. Two died and the third recovered. The two that died had black vomit; the one that recovered had no black vomit in the house, but profuse epistaxis. No history could be obtained of two of these cases, prior to their admission, owing to their feeble and exhausted condition when received, except that presented in the permit, viz., that one came from Shippen Lane, Moyamensing, and the other from Front Street below South, in the infected district.

We are indebted to Dr. J. D. Stewart, the principal physician of the hospital, for the accompanying statement.

Cath. Handson, Irish, aged forty, was admitted from Shippen Lane, Moyamensing, August 1. I have been unable to procure any information respecting her prior to admission. When received she was in a state of muttering delirium; general yellow hue of the skin and conjunctiva. A few hours after admission she commenced vomiting a blackish fluid; this continued until death, which occurred the day following her reception, August 2.

A *post-mortem* was made. There appeared to be a general jaundiced hue of the body; the stomach contained a similar fluid to that she had been ejecting; the mucous membrane was softened, and appeared entirely removed from portions of the stomach; there seemed to be general injection of the organs of digestion; the liver the color of rhubarb; the brain was not examined; the

fluid contained in the stomach was submitted to the microscope, and was found to contain blood-corpuscles.

Mary Fortner, Irish, aged twenty-eight, was brought into the house last evening, August 19, from Front Street, between Shippen and South; she died this morning, evidently of malignant fever.

A *post-mortem* examination was made to-day. When admitted, her brain appeared to be unaffected, answering questions intelligently, although with difficulty; her prostration was extreme. When admitted, she had been sick five days; her greatest complaint was extreme tenderness over the epigastric region; previous to death she vomited a dark fluid; upon examination, the stomach was found to contain similar fluid; it was very much injected, but it did not appear to have sustained the same amount of injury as the previous case; the liver was of a bright yellow color; the skin was also yellow. In both of the cases the lungs were entirely healthy. The brain of the last case was examined, although somewhat injected, not to any important extent. We have examined with the microscope the fluid found in the stomach of the last case, and discovered the blood-corpuscles.

The third case was John Reehil, Irish, aged twenty-three, admitted August 22, from No. 145 South Front Street, above Dock, where he had been under the care of Dr. W. H. Hooper, who has offered the annexed history of symptoms.

"Saw John on Friday, August 19, at 5 P. M.; found him in the second stage. The eye red, injected, and yellow; complained of great epigastric uneasiness; tenderness on pressure: continual vomiting and retching. From what I could learn, he had been suffering from a high fever for two days past.

"12 P. M. Great debility; pulse sinking; slight delirium.

"20th, 7 A. M. Skin and eye completely yellow; the blister, which had been applied over the epigastrium, on being cut, stained his linen of a yellow hue; greater debility manifest; delirium increased; vomiting at intervals, the matter vomited during the night resembling coffee-grounds, or the lees of porter (to use the nurse's language).

"5 P. M. In the same condition. Vomiting more frequent, but the matter contained nothing abnormal.

"21st, 7 A. M. Reaction had taken place; pulse full and tense.

"1 P. M. In the same condition. Vomiting had ceased.

"22d, 9 A. M. Pulse more feeble, 78 per minute. Informed by the nurse vomiting had returned during the night, but it contained nothing abnormal; he was delirious during the night; has hemorrhage from the nostrils this morning. Sent at 3 P. M. to Blockley. Continued delirious during the day."

Dr. Gilbert visited this patient, and confirms the statement of Dr. Hooper in every particular, and does not hesitate in pronouncing it genuine yellow fever.

The treatment by Dr. H. was with five-grain doses of quinia every hour, beef-tea and brandy, with stimulating frictions over the body.

We have been informed by Dr. Stewart, chief resident physician of Blockley Hospital, that no quinia was employed in any of these cases while in the house. In that of Reehil, cups were freely used to back of neck and over the abdomen, together with calomel pushed to salivation. This patient had no vomiting from the time he entered the house; that he lost about twenty ounces of blood by epistaxis and the application of the cups, which relieved his gastric tenderness; his stools were gray until ptyalism was effected.

On Saturday last, September 3, we visited Reehil at the hospital, and found him convalescent, walking about the ward, with a good appetite, but unable to indulge it as he labored under ptyalism. The surface of his body was universally yellow, while the conjunctiva exhibited a very deep-yellow tint.

Questioned him minutely in order to learn the origin of his disease, and found that he came to this city very much exhausted from hard work, on Monday afternoon, August 15, from Jersey City, where he had resided for six weeks, on the wharf near North Point. A stranger, he was taken by a boy to the Exchange, from whence, in an omnibus, to one John Smith's Tavern, near the Schuylkill, he thinks. Here he stopped all night, and in the morning went to No. 145 Front Street, near Dock, where he took boarding. All that day, Tuesday, he was strolling along the wharves, as far down as the saw-mills near the Navy Yard, looking for work. On Wednesday he was out again in the same direction, or, as he expressed himself, "a long way below Dock Street, on the wharf," and, on his return, was taken with violent



cramps in his legs, felt very bad, and had difficulty in reaching his boarding-house.

From this statement the inference is natural, if not conclusive, that John Reehil contracted the fever during Tuesday and Wednesday, while passing through the infected neighborhood on his way to the saw-mills. His system exhausted, and predisposed to disease, more readily received the poison, which, from the same cause, developed itself in a few hours in the form of a malignant type of fever.

Bridget Tibbley, aged thirty-three years, Irish, died at St. Joseph's Hospital, of yellow fever, on the 22d of August. She resided at Third and Catharine Streets, and spent Friday and Saturday, the 12th and 13th, at No. 221 South Front Street, between Lombard and South, east or Delaware side of the street. On Sunday, the 14th, had a chill. On Wednesday, the 17th, went to the hospital, and died on the 22d, the eighth day of her disease.

Joel Sauteir, aged thirty-six, was admitted into the Pennsylvania Hospital, from a sailor boarding-house in Shippen Street, near Front, on the 20th of August. He had been sick a number of days, and his last voyage was from Cuba. His case presented the usual symptoms of yellow fever, without the black vomit. This man recovered with his skin and eyes jaundiced.

The annexed case was treated in the City Hospital, on Bush Hill, by Dr. J. F. Bird, the physician to that institution, who kindly furnished the notes of symptoms and treatment.

The name of the patient was Mary Gibson, Irish, aged twenty-two years. Resided at the corner of Lombard and Penn Streets, and was sent to the hospital, Wednesday, the 24th of August, the day on which she sickened.

*Wednesday.* Pulse one hundred and ten; headache; tongue slightly furred, soft, and without tremor; no epigastric tenderness. Gave an emetic of ipecac. grs. 20, followed by calomel, grs. 20, in two powders; in four hours took half an ounce of castor-oil—has acted three times.

*Thursday, 10 o'clock.* Better. Pulse one hundred; eyes slightly injected. Is to take every two hours four grains of calomel, with one-fourth grain of opium. There is no eruption over the abdomen.

"4½ o'clock P. M. Pulse one hundred. Continue treatment of morning.

"*Friday, 12 o'clock M.* Pulse eighty. Has had several bilious evacuations; capillary circulation very languid; constant nausea. Will take a pill every two hours, consisting of three grains of calomel. Diet—toast water, gum water, weak tea, and arrowroot.

"5 o'clock P. M. Pulse eighty. Apparently better. Continue treatment of morning.

"*Saturday, 12 o'clock M.* Pulse eighty; some petechia about the chest; eyes injected; some nausea; no alvine evacuations. Has taken three grains of calomel and two of quinia four times. R. Calomel, five grains, every two hours. Blister over region of liver.

"*Sunday, 28th, 9 o'clock.* Pulse eighty-eight; capillary circulation very torpid; purplish tint over face and upper extremities; very little epigastric tenderness; eyes injected. Has been vomiting a dark-colored fluid, described by the nurse as being the "*color of laudanum.*" Tongue cleaning a little. Blister did not vesicate. R. Renew the blister, and give five grains of quinia and three of calomel every hour for four hours.

"5 o'clock P. M. Pulse one hundred, and feeble; eyes still injected, and left one discharging purulent matter; capillary circulation better. R. Quinia, twenty grains; water, two ounces; give a teaspoonful every hour. Continue calomel, three grains every two hours. Bowels have not been moved; ordered an enema. Weak brandy punch and chicken tea. Pains in her limbs much less severe. Intellect perfectly clear, and has been during her sickness. For her eye, apply cloths wet with a solution of sulphate of zinc, two grains, and sulphate of morphia, three grains, in four ounces of water.

"*Monday morning, 9 o'clock.* Pulse one hundred; vomits a dark-colored fluid; bowels moved by enema yesterday; eyes injected; capillary circulation bad; catamenia have appeared. R. Continue quinia and diet. Blister the extremities, and administer another enema. Discontinue calomel this forenoon.

"*Monday afternoon, 5 o'clock.* Pulse one hundred; vomiting as before; no mental aberration. Withdraw calomel; continue diet, stimulants, and quinia.

"*Tuesday, 30th, 10 o'clock.* Pulse scarcely perceptible; carotid

beats one hundred and twenty per minute; muscular tremors; jaundiced hue continues, also the vomiting of dark fluid like coffee-grounds; intellect still clear. Continue stimulants and quinia.

"Strong convulsions came on about 3 P. M., and at 4 P. M. the patient expired. *Post-mortem*, sixteen hours after death."

The following is a correct narrative of the evidences revealed, as taken down at the time by Dr. Remington:—

*Post-mortem* examination of Mary Gibson, made by Dr. Riley, 8th Mo. 31, 1853, 8 A. M., in the presence of Drs. Jewell, Bird, and Remington, sixteen hours after death.

External aspect uniformly yellow; no emaciation; vibices on the inferior extremities, with general purple suffusion principally on the inferior surface of the trunk and extremities; conjunctiva yellow, and that of the left eye remaining ecchymosed or injected with blood. On opening the cavity of the abdomen, found the adipose matter somewhat abundant and deeply tinged with bile; muscular fibre of a deep red color. The stomach containing about four ounces of black vomit, its villi enlarged and corrugated; the mucous surface stained by its contents, and covered with red points, especially at its cardiac extremity, with patches of redness interspersed throughout.

The liver was rather firm in texture, and in color closely resembling yellow *ochre*; gall-bladder distended with inspissated, dark green bile. The duodenum containing bilious secretions, with spots of inflammation diffused over its surface; the jejunum was a deep red, with softening and destruction of its mucous surface. The contents of the ileum, cæcum, colon, and rectum consisted of dark grumous blood, entirely devoid of fecal odor, which smell, by repeated, close, and accurate examinations made by all present, could not be detected in any part of the intestinal canal or its contents.

The cavities of the heart nearly empty, without coagula; and, like the aorta, containing a small amount of dark fluid blood.

The brain and its investing membranes healthy in appearance, though slightly softened.

The last case on record, is that of Edward Stricker, aged eighteen, a native of Germany, a seaman on board the brig *Stæts Von Brock*, lying at a wharf first above Mead Alley, and below Almond Street. He came to the Pennsylvania Hospital on Wed-



nesday, the 31st of August, and died on Saturday, the 3d of September. This was a well-marked case of yellow fever, fully confirmed by the *post-mortem*.\*

On board the above vessel, the captain (Broedhering) died on the 4th inst., after an illness of four days. His physician, Dr. Blom, informed us that he died from bilious fever. Three of the crew are now sick with similar symptoms. This vessel arrived from Leghorn on the 13th of August, and has been up to this time at Mead Alley wharf.

It may not be unpardonable to name the fact, that there is at present a vessel riding quarantine at our Lazaretto from New Orleans.

The Caledonia Brander, Rowland, Master, left New Orleans, August 7, with a crew of eighteen men and eleven passengers; all well. On the first day out, a seaman, Charles Tyrrell, was taken sick with yellow fever, and died on the 9th, forty-eight hours ill. On the 8th, two more of the crew sickened, and returned to duty on the 23d; fifteen days ill. On the 10th, the second mate was attacked with chills and fever. On the 11th, another of the crew was taken sick with chill and headache, but returned to duty in two days. On the 13th, A. Witmore, seaman, took ill with yellow fever, and died on the 17th, ninety-six hours. On the 19th, the carpenter sickened with Chagres fever. On the 26th, William Green was taken ill with yellow fever, and on the 31st was received into the hospital at the Lazaretto, where he died on the 1st instant.

As this last case was undoubtedly one of yellow fever, contracted on board a vessel direct from New Orleans, where the disease has raged with almost unprecedented violence, it will be interesting to present the following account, politely sent us by Dr. T. J. P. Stokes, the Lazaretto physician, together with the *post-mortem* examination, for the purpose of showing its pathological resemblance to those cases of fever which have occurred in Philadelphia.

\* As a minute account of the pathology and treatment, together with the morbid appearances exhibited after death, of all the cases that were treated in the Pennsylvania Hospital is in course of preparation, and will be published, we deem it unnecessary to enlarge.

*Case of William Green.*

"William Green, American, aged about forty, a printer, had worked in the *Delta* office, New Orleans, all summer; left New Orleans on the 7th of August. Was visited on board the ship *Caledonia Brander*, August 31, 9 A. M. His skin was of a deep yellow; eyes injected, of a deep yellow, without redness; pulse 90; weakness moderate; sat up in bed and answered questions coherently; has had no vomiting for sixteen hours; tongue reddish-brown, with white edges; mouth moist, and skin slightly warmer than natural; bowels free, has had two passages this morning.

"11 A. M. Brought into hospital. In the boat, on the way to the hospital, had a slight convulsion, and another a few minutes after he was placed in bed. Pulse feeble and small, 86.

"12 M. Found him pulseless, without sense or motion, and died at 1 P. M., without convulsion or struggle.

"The captain gave the following account of his case: "He was taken on the 26th of August, with chill, headache, and fever; had no vomiting until second day, then vomited a grayish fluid mixed with blood; the next day, 29th of August, vomited black matter; did not vomit afterwards. The yellowness came on the third day of his sickness."

"*Autopsy*, five hours after death.

"*Externally*.—Skin a deep yellow; deep yellow stripes, mottled with purple, down the back; lower extremities less yellow than trunk, arms, and head; much emaciated.

"*Head*.—Not examined.

"*Chest*.—Lungs natural; heart natural in size and appearance.

"*Stomach*.—Contained a pint of fluid, blackish-gray, with green tinge; after standing twelve hours in a glass, had a pale reddish appearance on its edges; patches of thickened mucous membrane, thinly filmed with bright red blood; mucous membrane ridged longitudinally, the ridges from an inch to two inches apart, and elevated from one-eighth to one-fourth of an inch above the surface; the surface of the mucous membrane stained with the black liquid, which I found it difficult to wash off with warm water and soap; the stomach was (except the above) of the natural size and consistence.

"*Liver*.—Pale yellow color in its *right* lobe; natural in *left* lobe, except yellow patches in its substance of half an inch in diameter.

"*Gall-Bladder*.—Filled with the blackish secretion similar to that found in the stomach.

"*Spleen*.—Perfectly natural.

"*Duodenum*.—Yellow externally; mouth full of the blackish-green secretion; the mucous membrane corrugated and ridged, patches of apparently inflamed mucous membrane.

"*Small Intestines and Mesentery*.—Bloodvessels of mesentery injected with dark red blood, and deeply tinged with yellow; small intestines contained a small portion of blackish fluid in their whole length, and were externally of a yellow and violet color; mucous membrane slightly ridged; glands of Peyer natural.

"*Large Intestine*.—Contained some of the blackish liquid; more fluid and watery, and less deeply-colored yellow tinge; in other respects natural.

"*Pancreas*.—Enlarged, and injected with blood.

"*Kidneys*.—Natural.

"*Bladder*.—Smaller than usual; contained a tablespoonful of dark yellow urine.

"LAZARETTO, September 1, 1853."

We have but little information to record of a precise character, as regards the treatment in the above cases. It has not been so much our object to furnish remarks on the therapeutics of the disease, as to present a detailed account of its outbreak, and exhibit as nearly as possible its local origin and spread.

In the first stage of the fever, the treatment in general has been by bloodletting from the arm and by cups to the back and abdomen, emetics, mercurial purges, diaphoretics, &c. During the second stage, or as soon as a remission took place, which was generally about the third or fourth day from the attack, calomel as a sialogogue was administered in some cases; in others quinia, in three or five-grain doses, every one or two hours. In the event of no speedy reaction, brandy or wine internally, and local stimulating applications by blisters and rubefacients were resorted to.

Quinia in full doses, on the first intimation of a remission from fever, appears to have been a favorite remedy. In some cases,



over seventy grains were administered daily for several days, and, as far as we could learn, without any annoyance to the brain or other organ, but with advantage. It will be remembered, however, that the cases at the Blockley Almshouse Hospital were treated without quinia in any stage of the disease. Calomel, pushed to salivation, was the principal remedy employed.

We have already alluded to the fact, that there have been other cases of disease assuming a malignant type of fever in our city since the 19th of July, in the immediate vicinity of the infected district, which we were not able to secure.

Again, there were others that resembled, in many of their features, the cases recorded as yellow fever. These, however, we have designedly omitted, because they could not be strictly identified, although it is not altogether improbable, if yellow fever had existed as an epidemic, they would have been reported as genuine cases.

Among the latter, and we allude to them particularly, because they may be noticed elsewhere, were those of Samuel Morrison, No. 76 Penn Street, below South; Joseph Roberts, one of the inspectors of vessels for the Board of Health; J. R. Davis, No. 3 Benton Street (West Market Street); Mrs. Horner, Second and South Streets; Catherine Dougherty, No. 85 Penn Street; a servant girl at No. 24 Union Street; — Jones, in Water Street, above Almond Street; Christopher Ruff, Front Street, below Mead Alley.

The certificates in these instances read, remittent, bilious, and typhus fevers. Nor were the physicians in either of these cases willing to pronounce them yellow fever.

The case of S. Morrison, which we had an opportunity of inspecting, was an aggravated attack of bilious remittent, under which he sunk at the expiration of ten days, although he died in the same room where the Carrigan family perished about two weeks subsequently.

Joseph Roberts may have died of fever of a malignant type, but there were circumstances in his case which would lead to a different conclusion. His physician, Dr. C. W. Hornor, was not prepared to confirm the general impression that it was yellow fever.

Mrs. Horner died of bilious fever, after six days' illness. Ac-

according to the evidence of one of her physicians, Dr. J. Wilson Moore, there was a hemorrhagic tendency in her case, and she became quite yellow before death.

The case of Davis was peculiar. Dr. Gilbert, in writing to us, says of it: "I had a case of malignant fever in my own practice, which presented striking features of yellow fever; but, on *post-mortem* examination, proved to be malignant bilious, complicated with inflammation of the bowels."

This patient sickened on Monday evening, the 15th of July, and died on the following Thursday morning, in about sixty hours.

The other cases referred to, presented nothing remarkable, and were reported as bilious and as typhus fevers.

It would have added very much to the interest of this document if we could have secured the entire list of cases of fever that have occurred since the irruption of the disease on the 19th of July, in the immediate vicinity of the infected district. Some few have undoubtedly escaped our notice; owing, in a great measure, to the fact, that the Board of Health has not required the physicians, by any special resolution, to report their cases of malignant or yellow fever.\* A law of the legislature, however, makes it binding on physicians to do so. The Board of Health, no doubt, judged wisely in the matter, inasmuch as the fever has not appeared in an epidemic form throughout our city. By this decision, and the hesitation on the part of many practitioners to make their cases known, we never can arrive at a complete account of all of them, with their date and locality.

Enough certainly has been accumulated to establish the premises, that yellow fever has existed in our city since July 19, confining its ravages to a particular locality, bordering on the wharves and docks of the Delaware, which were a favorite resort for the malignant fevers that prevailed at similar seasons in Philadelphia, near the close of the last and at the beginning of the present century.

\* Since the above was written, the Board of Health passed a resolution requiring physicians to report their cases of malignant fever.

*Table of Yellow Fever Cases in Philadelphia, from July 19 to August 31, 1853, in the numerical order, &c. &c., in which they occurred.*

No.	Name.	Age.	Sex.	Nativity.	Where contracted.	Date of attack.	Where attended.	By whom.	Days Sick.	Black vomit.	Died.	Recovered.
1	Joseph Sharp	18	M.	U. States	South Street wharf	July 19	Corner Almond and Penn Champion House	Dr. E. S. Rickard.	7		July 26	
2	George Robinson	50	M.	England	Wharf between South and Lombard	" 20	"	" W. Klapp	3	Black vomit	" 23	
3	Thomas D. Koehler	19	M.	U. States	South Street wharf	" 20	"	"	7	"	" 27	
4	G. W. Kerkelager	40	M.	Germany	"	" 20	Red Bank Ferry House	Jos. Klapp	5	"	" 25	
5	Mrs. Kerkelager	38	F.	"	"	" 20	"	"	6	"	" 26	
6	Charles Burrows	28	M.	U. States	Wharf between South and Lombard	" 20	Pennsylvania Hospital	W. Gerhard	5	"	" 22	
7	Frederick H. Kellog	22	M.	Ireland	Barque Mandarin	" 21	"	"	3	"	" 23	
8	Fanny Martin	21	F.	U. States	South Street wharf	" 21	Champion House	W. Klapp	5	"	" 23	
9	J. M. G. Koehler	17	F.	"	"	" 21	"	"	"	"	" 26	Recovered.
10	Pauline Koehler	9	F.	"	"	" 21	"	"	"	"	"	"
11	Honora Stanton	35	F.	Ireland	Little Water Street	" 21	12 Little Water Street	J. Gegan	5	"	" 27	"
12	Silas Green	40	M.	U. States	Almond Street wharf	" 22	"	S. Stewart	"	"	"	"
13	R. N. Campbell	35	M.	England	Barque Mandarin	" 23	Clement's Hotel	W. Klapp	"	"	"	"
14	John Shelleoff	23	M.	"	Wharf between South and Lombard	" 25	Pennsylvania Hospital	W. Gerhard	5	"	" 30	"
15	John White	22	M.	England	"	" 25	"	"	"	"	"	"
16	Rosanna McKean	24	F.	Ireland	South and Water Streets	" 25	172 South Second Street	W. H. Hooper	5	"	" 30	"
17	David Murray	40	M.	England	Wharf between Almond and South	" 26	Pennsylvania Hospital	W. Gerhard	"	"	"	"
18	James Markley	42	M.	U. States	Wharf between South and Lombard	" 27	"	"	"	"	"	"
19	John Haslett	19	M.	Ireland	"	" 28	Prime Street	"	"	"	"	"
20	Mrs. Mullen	35	F.	"	Doubtful	" 29	Eleventh and Christian	W. Klapp	2	"	Aug. 1	
21	Mary Bulger	31	F.	"	4 Swanson Street	" 29	"	W. Keating	3	"	" 2	
22	Ann Jane Stewart	31	F.	U. States	12 Swanson Street	" 30	13 Swanson Street	J. Gegan	6	"	" 5	
23	Mary Williams	22	F.	Ireland	Swanson and South Streets	" 30	South Tenth Street	S. Jackson	4	"	" 3	
24	John S. Williams	22	M.	Ireland	12 Swanson Street	Aug. 6	St. Joseph's Hospital	F. G. Smith	6	"	" 13	
25	Betsey Stephens	18	F.	U. States	Almond St. Wharf	" 9	36 Almond Street	J. Y. Herrick	3	"	" 12	
26	Ellen Boland	22	F.	Ireland	Front Street below Almond	" 9	Kridler's Court	J. Heritage	4	"	" 13	
27	James Riley	28	M.	"	Unknown	" 10	St. Joseph's Hospital	F. G. Smith	5	"	" 15	
28	Oliver Pitcher	34	M.	U. States	Doubtful	" 13	25 Union Street	J. Gegan	2	"	" 15	
29	James Genton	19	M.	"	"	" 15	Pennsylvania Hospital	W. Gerhard	3	"	" 18	
30	Thomas E. Crowell	38	M.	"	South and Front Streets	" 16	"	"	12	"	" 27	
31	Mary Carrigan	71	F.	Ireland	76 Penn Street	" 17	Front Street below South	J. Gegan	3	"	" 19	
32	Mary Carrigan (D.)	18	F.	"	"	" 17	"	J. Huckel	2	"	" 19	
33	John Reehil	20	M.	"	Wharf below Lombard Street	" 17	"	"	3	"	" 20	
34	Ellen Parr	20	F.	"	Unknown	" 18	Blockley Hospital	J. Stewart	"	"	"	"
35	Mary Turner	35	F.	"	Doubtful	" 18	13 Gray's Alley	W. H. Hooper	2	"	" 20	
36	John Brennock	24	M.	U. States	82 Lombard Street	" 18	Loxley's Court	"	"	"	"	"
37	Edward Carrigan	24	M.	Ireland	Doubtful	" 18	Pennsylvania Hospital	W. Gerhard	1	"	" 22	
38	Catharine Handson	24	F.	"	76 Penn Street	" 19	"	W. Sharp	3	"	" 19	
39	Mary Fortner	40	F.	"	Unknown	" 19	Blockley Hospital	J. Stewart	"	"	" 21	
40	Frederick Tibley	33	F.	"	Front Street below South	" 14	"	"	7	"	" 22	
41	Joel Sauter	33	M.	Germany	221 Front Street	" 20	St. Joseph's Hospital	F. G. Smith	8	"	" 22	
42	Bridge Tibley	33	F.	Ireland	Shippin and Front Streets	" 20	Pennsylvania Hospital	W. Gerhard	"	"	" 30	
43	Mary Gibson	30	F.	"	Penn and Lombard Streets	" 21	City Hospital	J. F. Bird	6	"	"	
44	Edward Stricker	18	M.	Germany	Wharf below Almond Street	" 24	Pennsylvania Hospital	W. Gerhard	3	"	Sept. 3	

\* In stomach after death.

† Doubtful.



DIAGRAM  
of the infected District and the location of the Cases of  
**YELLOW FEVER**  
with the order in which they occurred  
from July 19<sup>th</sup> to August 31<sup>st</sup>  
1853.  
HILAD<sup>A</sup>

W. J.

Third

Second

Front

Swanson

Wharf

Street

3<sup>rd</sup> position of  
Barque Mandar

Brig Staats van Brock

D e l a w a r e

R i v e r

Contracted in Swanson St. died in April 24.

South

Penn

Barque cur Stand

South to Ferry  
cutter

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Barque cur Stand

Lombard

Pine

Street

Street

Street

Street

Street

Street

Street

Street

Street

Street

Street

Reference

The black dots indicate the locality of the cases.  
The figures the order in which they occurred.  
The dotted lines lead from one case to another in  
their numerical order.  
The date of each case, corresponding with the  
number on the map, may be found in the table.

Contracted at South & Swanson St.

Contracted along the Wharves below Lombard St.

Contracted at South & Swanson St.

Contracted along the Wharves below Lombard St.

## APPENDIX.

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IN addition to the forty-four cases of yellow fever, enumerated in the preceding articles, as read before the College of Physicians, we have, after considerable labor, gathered the statistics of one hundred and twenty-six more; bringing the report up to October 7, 1853, the date of the occurrence of the last case. Thus making in all one hundred and seventy cases of yellow fever in Philadelphia, from July 19 to October 7, inclusive, a period of eighty days.

Of these, one hundred and twenty-eight died; equivalent to 1 in every 1.42 hundredths, or 75 per cent.

One hundred and forty-seven of all the cases may be traced to a direct intercourse with the infected locality. Twenty-two are of doubtful or unknown origin; and one was contracted at the Lazaretto, while at work on board the ship *Caledonia Brander*, from New Orleans.\*

One hundred and eighteen were treated in private practice, twenty-four at the Pennsylvania Hospital, eighteen at the Blockley Hospital, seven at the Bush Hill or City Hospital, and three at St. Joseph's.

Ninety, equal to 53 per cent. of the cases, were accompanied with black vomit; all of which died, with the exception of four. The genuineness of the discharge in one of these four cases has been doubted, as stated on page 27. As the discharge of black vomit from the stomach of a yellow fever patient has generally been considered a fatal symptom, we should always be inclined to question the character of the matter vomited where patients recover, who are said to have had black vomit, no matter how high the authority from which they emanate, unless it had first undergone a careful examination under the microscope, and then found to contain blood-corpuscles.

The greatest number of cases that occurred in any one day was ten; this happened on the 11th and also on the 19th of September.

The duration of the cases that proved fatal was from two to twenty-four days; the mean period was a fraction less than six days.

Ninety-three of all the cases that occurred were among males, and seventy-seven in females. That period of life which appeared most susceptible of the fever was between twenty and thirty; one-third of all the cases happened in this decade.

\* This vessel had yellow fever on board when she arrived.



Out of the whole number of cases recorded, sixty-eight were born in the United States, sixty-two in Ireland, nineteen in Germany, eighteen in England, one in Scotland, one in France, and one in Spain.

In no instance have we learned that the fever has been communicated to others, by those laboring under the disease. At the Pennsylvania Hospital the yellow fever cases were placed in the wards, promiscuously, with other patients, without any attempt to prevent intercourse between them; and not an individual, either among the patients, nurses, or visitors, contracted the disease. The same immunity was observed at the Blockley, St. Joseph's, and City Hospitals. In private practice, although many of the cases were treated away from the infected locality, where they contracted the fever, we have not been able to hear, after the strictest inquiry, that the disease spread itself in any case beyond the individuals infected, although there was unrestrained intercourse between them and their friends. An evidence of the non-contagiousness of yellow fever; or, in other words, that the poison which produces yellow fever is incapable of being generated in the body of the sick, so as to produce a similar disease in those attending upon them.

We have been unable to calculate the proportion of cases, or even of deaths, to the population, from yellow fever, in the infected district. The information required to make an accurate estimate not being reliable, all we can offer on this subject is, that the population involved was by no means a crowded one. The number of resident inhabitants in that locality, where the first nineteen cases happened, bounded by the south side of South Street, the west side of Little Water Street, Lombard Street, and the Delaware front, did not exceed one hundred. The remaining portion of the infected district to which the fever seemed to be confined, and to which we have ascribed limits, extending from Union Street on the North, to Queen Street on the South, Second Street on the west, and the Delaware front on the east, did not by any means contain an excess of population. The inference, therefore, is, not only, as we have already shown, that the deaths to cases have been large, but that the cases to the population, as well as the deaths to the population residing within the above limits, have been proportionately large.

While the fever in general has been confined to the limits above named, it is evident that a few cases of genuine yellow fever have appeared beyond these boundaries, between which and the infected locality, no direct communication could be traced. Showing either that isolated cases of malignant fever may occur in our city when the mean of the thermometer is above  $76^{\circ}$ , or that an epidemic influence was extending its treacherous march to remote and varied sections of our metropolis.